Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend the claims as follows:

1. (Currently Amended) A method of increasing cytosolic Ca^{2+} levels in an airway epithelial cell comprising contacting P2X receptors on the cell with an effective amount of Zn^{2+} and one or more of the following molecules: ATP; ~~ivermectin;~~ α, β-methylene-ATP; benzoyl-benzoyl-ATP; ATPγS; or AMPPNP, wherein there is a sustained elevation in cytosolic Ca^{2+} levels in the cell.

2. (Original) The method of claim 1, wherein the P2X receptors are not contacted with zincum gluconium.

3. (Original) The method of claim 1, wherein the Zn^{2+} is in the form of zinc chloride.

4-11. (Canceled).

12. (Previously Presented) The method of claim 1, further comprising
    a. contacting the cell with an effective amount of ATP, or
    b. reducing extracellular Na+ or contacting the cell with a Zn^{2+} containing solution with low Na+, or
    c. alkalinizing extracellular fluid or contacting the cell with an alkaline solution containing Zn^{2+}, or
    d. reducing extracellular Mg^{2+} or contacting the cell with a Zn^{2+} containing solution with low Mg^{2+}, or
    e. increasing extracellular Ca^{2+} or contacting the cell with a Zn^{2+} containing solution with high Ca^{2+}, or
    f. any combination of steps a-e.

13. (Currently Amended) A method of treating an airway disease in a subject, comprising contacting epithelial cells in the trachea, bronchi, bronchioles, or alveoli of a subject with an effective amount of Zn^{2+} and one or more of the following molecules: ATP; ~~ivermectin;~~ α, β-methylene-ATP; benzoyl-benzoyl-ATP; ATPγS; or AMPPNP, wherein there is a sustained elevation in cytosolic Ca^{2+} levels in the cell.

14-20. (Canceled).

21. (Previously Presented) The method of claim 13, further comprising
(a) contacting the cell with an effective amount of ATP, or
(b) reducing extracellular Na+ or contacting the cell with a Zn^{2+} containing solution with low Na+, or
(c) alkalinizing extracellular fluid or contacting the cell with an alkaline solution containing Zn^{2+}, or
(d) reducing extracellular Mg^{2+} or contacting the cell with a Zn^{2+} containing solution with low Mg^{2+}, or
(e) increasing extracellular Ca^{2+} or contacting the cell with a Zn^{2+} containing solution with high Ca^{2+}, or
(f) any combination of steps a-e.

22. (Currently Amended) The method of claim 13, wherein the contacting step is performed with Zn^{2+}; and ATP; ~~ivermectin;~~ α, β-methylene-ATP; benzoyl-benzoyl-ATP; ATPγS; or AMPPNP-containing inhalant, nebulization, aerosol, or instillant.

23. (Previously Presented) The method of claim 13, wherein the Zn^{2+} is in the form of zinc chloride ($ZnCl_2$).

24-36. (Canceled).

37. (Withdrawn) A composition comprising zinc and a saline solution, wherein the saline solution has low Na+, is enriched with Ca^{2+}, and is modified to an alkaline pH.

38. (Withdrawn) A nasal spray, nebulizer, or aerosol inhaler comprising the composition of claim 37.

39-40. (Canceled).

41. (Withdrawn) The composition of claim 37, wherein the zinc is not in the form of zincum gluconium.

42. (Withdrawn) A method of treating a bacterial infection in a subject, comprising administering to the subject the composition of claim 37.

43. (Withdrawn) A method of reducing inflammation in a subject, comprising administering to the subject the composition of claim 37.

44. (Withdrawn) A method of treating polycystic kidney disease in a subject, comprising administering to the subject the composition of claim 37.

45. (Withdrawn) A method of treating a subject with an endocrine disorder, comprising administering to the subject the composition of claim 37.

46-47. (Canceled).

48. (Withdrawn) A method of screening for an airway epithelial Ca^{2+} entry channel agonist, comprising

(a) contacting an airway epithelial cell with a test compound;

(b) detecting calcium levels in the airway epithelial cell; and

(c) screening for a sustained elevation in calcium as compared to a control level, indicating an airway epithelial Ca^{2+} entry channel agonist.

49. (Withdrawn) The method of claim 48, wherein the Ca^{2+} entry channel is selected from the group consisting of a P2X purinergic receptor Ca^{2+} entry channel, a transient receptor potential (TRP) Ca^{2+} entry channel, a store-operated Ca^{2+} (SOC) entry channel, a calcium release activated channel (ICRAC), and a CAT-1 Ca^{2+} entry channel.

50. (Withdrawn) The method of claim 48 further comprising the step of:

(d) screening for reversibility of response by removing the agonist during the assay.

51. (Withdrawn) The method of claim 50, further comprising the step of:

(e) screening for dependence upon extracellular Ca^{2+} by repeating the assay in a solution devoid of extracellular Ca^{2+}.

52. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is a cystic fibrosis airway epithelial cell.

53-57. (Canceled).

58. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of ATP.

59-60. (Canceled).

61. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of zinc.

62-63. (Canceled).

64. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is in an alkaline solution.

65-141. (Canceled).

142. (Previously Presented) The method of claim 1, further comprising reducing the cell's extracellular Na+ or contacting the cell with a Zn^{2+} containing solution with low Na+.

143. (Previously Presented) The method of claim 1 or claim 142, further comprising reducing the cell's extracellular Mg^{2+} or contacting the cell with a Zn^{2+} containing solution with low Mg^{2+}.

144. (Previously Presented) The method of claim 1, further comprising contacting the cell with an effective amount of ATP; reducing the cell's extracellular Na+; alkalinizing the cell's extracellular fluid; reducing the cell's extracellular Mg^{2+}; and increasing the cell's extracellular Ca^{2+}.

145. (Previously Presented) The method of claim 142, wherein the cell's extracellular Na+ is reduced by using an effective amount of amiloride.

146. (Previously Presented) The method of claim 142, wherein the cell's extracellular Na+ is reduced by substituting Na+ with N-methyl-D-glucamine (NMDG).